



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/994,816

11/28/2001

Katsuyuki Morii

111219

9757

25944

7590

04/26/2006

OLIFF & BERRIDGE, PLC

P.O. BOX 19928

ALEXANDRIA, VA 22320

EXAMINER

CLEVELAND, MICHAEL B

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/994,816

Applicant(s)

MORII ET AL.

Examiner

Michael Cleveland

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6, 8 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 080604.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant has petitioned for revival of the current application because they did not receive the final rejection mailed 2/4/2005. The petition was granted on 1/23/2006. Accordingly, the following is substantially a repetition of the final rejection mailed 2/4/2005. However, paragraph 3 about the IDS filed 10/31/2005 is new.

### ***Election/Restrictions***

2. Applicant's election of the invention of Group I, claims 1-4, 7, and 9 in the reply filed on 11/29/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim 5-6, 8, and 10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 11/29/2004.

### ***Information Disclosure Statement***

3. The information disclosure statement filed 10/31/2005 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

### ***Specification***

4. The substitute specification filed 11/29/2004 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: it seeks to add new matter into the specification, to

Art Unit: 1762

wit, the insertion at the top of p. 22 (references are to the marked-up version of the specification). Furthermore, the submission of the substitute specification fails to comply with 37 CFR 1.52(a)(1)(iv), which requires that any submission be “[p]lainly and legibly written either by a typewriter or machine printer in permanent dark ink or its equivalent” because the marked-up copy has handwritten additions. If Applicant chooses to re-submit the substitute specification, Applicant is required to submit the marked-up copy with the revision plainly and legibly written either by a typewriter or machine printer. Applicant is informed that differences in format (such as line spacing or word spacing) need not be indicated in the marked-up version.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita et al. (WO98/24271, hereafter ‘271. References are to US Application Publication 2003/0054186, the national stage entry of ‘271.) in view of Antoniadis et al. (U.S. Patent 6,174,613, hereafter ‘613).

‘271 teaches a method for manufacturing an organic electroluminescent (EL) device, comprising:

forming light emitting layers by discharging above a substrate, three compositions, each including at least one electroluminescent material.

‘271 does not explicitly teach that at least two of the inks include more than one EL material, and does not explicitly teach ordering the discharging of such inks starting with the ink with the least number of EL materials. However, it is extremely well known in the art of EL devices to use doped layers. See, for instance, ‘613, which teaches using doped polyfluorenes for all three colors (that is, inks with at least two EL materials) (col. 3, lines 36-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

Art Unit: 1762

have deposited such inks for all three colors because such doped inks are known in the art as suitable EL inks.

It is well settled that the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. See MPEP 2144.04.IV.C. and *In re Burhans* 154 F.2d 690, 69 USPQ 330 (CCPA 1946). There is no showing in the application that is commensurate in scope with the claims to demonstrate new or unexpected results. Therefore, any order of printing the three inks would have been *prima facie* obvious, including starting with the composition with the fewest EL materials or starting with the most difficult to separate.

7. Claims 3-4, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita '271 in view of Antonaidis '613 as applied to claims 1-2 above, and further in view of Nanto et al. (U.S. Patent 5,921,836, hereafter '836).

'271 and '805 are discussed above, but do not explicitly teach drying between application of consecutive inks. However, '836 teaches the suitability of drying after the application of each color ink for a color display panel (col. 1, line 58-col. 2, line 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have dried each color after applying it with a reasonable expectation of success because '836 teaches that such is a suitable method of applying multiple colors of a color display panel.

Claims 4 and 9: '271 teaches that the process may include forming pixel electrodes (101-103) and banks (105) between them, forming the EL layer and forming a cathode over the EL layer (Fig. 1) and teaches that a hole-transporting layer may be present between the pixel electrodes and the EL layer (Fig. 5), but does not explicitly teach using the embodiments together. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the banks of Fig. 1 in conjunction with the hole-transporting layer of Fig. 5 in order to have achieved the superior hole-transporting ability of the hole-transport layer and the contrast afforded by the banks with a reasonable expectation of success because those are the known advantages of hole-transport layers and banks. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have done so to have conserved hole-transporting material by only placing it in effective

Art Unit: 1762

locations (i.e., above the pixel electrodes). Note: '613 also teaches that the hole-transport layers may be deposited in between the barriers separating pixels.

8. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (U.S. Patent 6,447,934, hereafter '934) in view of Codama et al. (U.S. Patent 6,114,805, hereafter '805) and Page (U.S. Patent 3,796,930, hereafter '930).

'934 teaches a method for manufacturing an organic electroluminescent (EL) device, comprising:

forming light emitting layers by forming two layers of two compositions, each including two or more organic EL materials; and

ordering formation starting with a composition which has a fewest number of organic EL materials (Example 3; The first layer (4a) has two EL materials and the second (4b) has three.)

'934 states that deposition may be via vapor deposition or sputtering (col. 6, lines 23-25), but does not explicitly teach that each layer is formed by discharging the composition from a single source above the substrate. However, the selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness.

*Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07. It is known in the art of forming organic EL devices to produce doped layer by evaporation from a single source ('805, col. 12, lines 20-32), and it is also known in the art of evaporation to have the vapor deposition source above the substrate ('930, col. 7, lines 6-9). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have deposited the doped layers of '934 from a single source above the substrate with a reasonable expectation of success because '805 teaches that doped EL layers may be produced from a single source and '934 teaches that a vapor deposition source may be disposed above the substrate.

Claim 2: Applicant states that layers with more EL materials are more easily subject to separation.

9. Claims 1-3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki '934 in view of Antoniadis et al. (U.S. Patent 6,174,613, hereafter '613).

Art Unit: 1762

'934 is described above, but does not explicitly teach that each layer is formed by discharging the composition from a single source above the substrate. However, the selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07. '613 teaches that ink-jet printing from above the substrate may be used to deposit doped EL layers (col. 3, lines 36-57; Fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have deposited the layers of '934 by ink-jet printing because '613 teaches that ink-jet printing is a suitable method of depositing the layers of ink-jet devices.

Claim 2: Applicant states that layers with more EL materials are more easily subject to separation.

Claims 3 and 7: '613 teaches that subsequent layers may be applied after the previous layer is dried (col. 4, lines 21-34).

10. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki '934 and Antoniadis '613, as applied to claims 3 and 7, above, and further in view of Miyashita '271.

'934 and '613 are discussed above. Further, '934 teaches forming a first electrode (2), then a hole-transporting layer (3) before the EL layers and a counter electrode (6) afterward. Also, '613 teaches that individual pixels may be formed by depositing the inks in between barriers separating the pixels on the substrate (col. 4, lines 3-20). They do not explicitly teach that the first electrode is divided into pixel electrodes corresponding to the substrate. However, the Examiner takes Official Notice that it is extremely well known in the art of EL device to form pixels by forming pixel electrodes that correspond to the pixels. See, for instance, '271, elements (101-103) and discussion thereof.

### ***Response to Arguments***

11. Applicant's arguments filed 11/29/2004 have been fully considered but they are not persuasive.

Art Unit: 1762

Applicant argues that the disclosure at p. 22 of the marked-up version is discussed at paragraph 61 of the substitute specification. The argument is unconvincing because paragraph 61 deals with the deposition of layer 16 on layer 15, but the addition at p. 22 (paragraph 84 of the clean copy) deals instead with the deposition of ink 17a on layer 16. Applicant's argument that the disclosure is discussed throughout the specification is unconvincing in the absence of a citation of the specific language which supports the amendment.

Applicant's arguments, see p. 4, filed 11/29/2004, with respect to the rejection(s) of claim(s) 1-4, 7, and 9 under 35 USC 102 and 103 based on Miyashita alone have been fully considered and are persuasive in view of the amendment. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the art as applied above.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sakaguchi (U.S. Patent Application Publication 2003/0132703) is cited as evidence of a process in which a two-component green mixture is deposited first, a two-component red mixture second, and a single-component blue material third.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.




Art Unit: 1762

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Michael Cleveland  
Primary Examiner  
Art Unit 1762

4/23/2006